

REMARKS

The specification was amended at page 1 to include the application number of the provisional application.

The Examiner noted an error in paragraph [0020] of the published patent application US 2005/0180493 A1. However, referring to page 7, line 3, of the patent application as filed the text reads "equalizers 14A and 14B", not "equalizers 4A and 14B" as in the published application. As such, the typographical error appears only in the published application, not in the application text as filed, and the undersigned attorney believes that no amendment is needed to the specification as filed.

Claims 1, 3-6, 10, 12, 14-16, 22, 24, 26-28 and 32 are rejected under 35 USC 103(a) as being unpatentable over Huang (EP 1289182) in view of Jayaraman et. al. (US 20040165653). The rejection is respectfully disagreed with, and is traversed below.

The objection to claims 2, 13, 23 and 25 is noted with appreciation. The applicants reserve the right to amend these claims to write them into independent form.

It is argued that Huang does not take into account the effect of despreading in the inter-antenna interference (IAI) and multiple access interference (MAI) levels in the equalizer and, thus, clearly fails to balance suppression of interferences. This would result in degraded performance compared to that of the invention as claimed in claims 1-33.

Each independent claim recites N equalizers and J correlators, where $J=N$ times the number of physical channels for a signal received from N transmit antennas. See, for example, Figure 3 ($J=6$ correlators, one for each of three physical channels for each $N=2$ transmit antennas). Huang at figure 1 and paragraph [0018] describes M transmit antennas and only M despreaders. Whereas Huang despreads once per-transmit antenna, the use of J correlators enables despreading on a per-channel basis for *each* transmit antenna. The once per-transmit antenna despreading of

Huang continues the deficiency noted at page 8, equation (1) and at least lines 15-19 of the present application, i.e., suppressing multiple access interference MAI but failing to suppress IAI. The exemplary embodiments of this invention balance suppression among MAI and IAI using N equalizers coupled to $J > N$ correlators.

Further, because Huang fails to recognize that IAI is not suppressed when a signal is despread only once per-transmit antenna, it does not equalize the $m=1 \dots N$ channels for *each* n^{th} transmit antenna. At least the presence of J correlators in the independent claims of this application is seen as clearly distinguishing the claimed invention over Huang.

Further, Huang describes at paragraph [0004] compensating for interference from other antennas at each receive antenna. However, Huang recognizes such interference arising only from time dispersion, which is described at paragraph [0002] as non-negligible under typical urban TU conditions. While Huang terms this time dispersion as interference between receive antennas, time dispersion is not seen to be true IAI as described in the application. Huang corrects for time dispersion interference with a space-time regenerator 529 (see paragraphs [0002], [0039], [0044] and [0048]-[0049]). Huang does not recognize that IAI may be suppressed by equalizing on a per channel basis for *each* transmit antenna, and therefore does not despread a signal from M transmit antennas with more than M despanders. Clearly, Huang does not expressly disclose or suggest despread a signal from N transmit antennas using J correlators and N equalizers, as is recited in the independent claims.

Huang does not balance suppression at least for the reason that Huang does not recognize despread as relevant to suppressing interference among antennas. The present application describes at least at page 10, lines 7-15, suppressing MAI and IAI simultaneously in the same correlating process, and the claims recite balancing suppression of interference.

This being the case, the use of multiple equalizers (one per base station during soft handoff) in Jayaraman et al. does not cure the deficiencies in the disclosure of Huang (see, for example, paragraphs [0009], [0010] and [0021], and then the paragraph [0089] specifically cited by the

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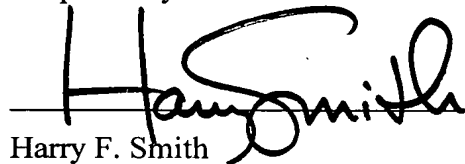
Examiner). Thus, and without expressly or impliedly admitting that the proposed combination of Huang and Jayaraman et al. is suggested or even workable, the proposed combination would not suggest the subject matter claimed in at least the independent claims to one skilled in the art.

The Examiner is respectfully requested to reconsider and remove the rejection of claims 1, 3-6, 10, 12, 14-16, 22, 24, 26-28 and 32 under 35 USC 103(a) as being unpatentable over Huang in view of Jayaraman et. al., and to allow all of the claims 1-33.

Claims 34-48 are newly added, and should be found to be allowable for at least the reasons that claims 1-33 are allowable. The newly added claims are supported throughout the specification and drawings. For example, support for claims 43-48 may be found on pages 10 and 11 of the application as filed. No new matter is added.

The Examiner is respectfully requested to favorably consider and allow all of the pending claims 1-48 as now presented for examination. An early notification of the allowability of claims 1-48 is earnestly solicited.

Respectfully submitted:


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